



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>A61F 2/42</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/69373</b> <b>(43) International Publication Date:</b> 23 November 2000 (23.11.00)
<b>(21) International Application Number:</b> PCT/IB00/00638 <b>(22) International Filing Date:</b> 12 May 2000 (12.05.00) <b>(30) Priority Data:</b> BO99A000253 13 May 1999 (13.05.99) IT <b>(71) Applicant (for all designated States except US):</b> ISTITUTI ORTOPEDICI RIZZOLI [IT/IT]; Via di Barbiano, 1/10, I-40136 Bologna (IT). <b>(71)(72) Applicant and Inventor:</b> O'CONNOR, J., John [IE/GB]; 9 Beaumont Road, Oxford OX3 8JN (GB). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> LEARDINI, Alberto [IT/IT]; Via Don Bedetti, 3, I-40129 Bologna (IT). GIANNINI, Sandro [IT/IT]; Piazza D'Azeglio, 7, I-55049 Viareggio (IT). CATANI, Fabio [IT/IT]; Via Vicenza, 4, I-40139 Bologna (IT). <b>(74) Agent:</b> LANZONI, Luciano; Bugnion S.p.A., Via Goito, 18, I-40126 Bologna (IT).		<b>(81) Designated States:</b> AE, AU, BG, BR, CA, CN, CZ, HR, HU, IL, JP, NO, NZ, PL, RU, SG, TR, US, ZA, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> A PROSTHESIS DEVICE FOR HUMAN ARTICULATIONS, IN PARTICULAR FOR THE ANKLE ARTICULATION		
<b>(57) Abstract</b> <p>A prosthesis device (1) for correct replacing of the articular surfaces of the human ankle joint comprises: a first component (2) having a spherical convex articular bearing surface (5); a second component (3) having a bearing surface (6) which has a convex shape in the frontal plane, and concave sulcus in the frontal plane; and a third component (4) located between said first and second components (2, 3) and having two surfaces (7, 8) which are complementary to and engage the upper convex and the lower concave sulcus surfaces (5, 6) to be fully congruent with the components (2, 3). The three components (2, 3, 4) can be designed from the subject-specific geometry of the ligaments (9, 10). The device (1) can move under natural muscular and ligamentous control, closely restoring that of a natural joint and maintaining uniform load distribution. A prosthesis device (1) implanted according to a stated method of ensuring equal dorsi- and plantar-flexion gaps between first (2) and second (3) components, is a part of the invention.</p>		

